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Francis Richardson, Esq.; E. J. Routh, Esq.; Grenville Ryder, Esq.; Mutu Coomaroo Swamy; Richard B. Wade, Esq.

ACCESSIONS to LIBRARY.—‘*Marvels of Friar Jordanus*,’ by Colonel Henry Yule, C.B., F.R.G.S., presented by the Hakluyt Society. ‘*Buddhism in Tibet*,’ by Dr. Schlagintweit. ‘*Results of a Scientific Mission to India and High Asia, undertaken between the years 1855-58*,’ by Hermann, Adolphe, and Robert de Schlagintweit; Vol. iii. ‘*Wanderings in West Africa*,’ by a F.R.G.S. ‘*A Treatise on the Chronology of Siriadic Monuments*,’ by Hekekyan Bey, C.E. ‘*Journal of the Discovery of the Source of the Nile*,’ by Capt. J. H. Speke, F.R.G.S. ‘*Abeokuta and the Camaroons Mountain*,’ by Capt. R. F. Burton, F.R.G.S. ‘*Continuations of Transactions of various Societies, &c. &c.*’

ACCESSIONS to MAP-ROOM from DEC. 14th to DEC. 23rd.—South Polar Chart, by A. Petermann. Railway Map of proposed Metropolitan and Suburban lines (1864), by E. Stanford. Continuation of the Trigonometrical Survey of India, on 13 sheets. Part 3 of Schlagintweit’s Atlas.

The first Paper read was—

1. *On the Non-Auriferous Character of the Rocks of West Australia.* By E. C. HARGREAVES. From a Despatch of His Excellency Sir GEORGE BOWEN, Governor of Queensland, to His Grace the DUKE OF NEWCASTLE, and communicated by the Colonial Office.

MR. HARGREAVES, who first practically opened out the gold-mines of Australia, having been sent to examine West Australia, with the view of determining if, as had been loosely asserted, it would prove to be auriferous, has, after various excursions into the interior, reported, that although rich in iron and copper ores, its rocks, so different from those of New South Wales and Victoria, render it essentially a non-auriferous region. Relying upon the absence of those rocks, which Sir Roderick Murchison (to whom he refers) had cited as the only true *matrices* of gold in veinstones, he shows that the statement that that geologist had ever suggested that West Australia would be found to be a gold-producing country, was entirely unfounded. Mr. Hargreaves had sent home numerous specimens of the rocks.

The PRESIDENT, in expressing the customary vote of thanks to the author of the Paper, said Mr. Hargreaves was the first practical explorer of the gold-mines of Australia. He had been sent out by Government to see if Western Australia would prove auriferous. He had stated what was certainly a fact, that he (the President) never had the remotest idea of suggesting that Western Australia would prove auriferous; on the contrary, he knew very well from what had been previously said of the structure of these rocks, and from the fossils and

organic remains which had been brought before them by Mr. Frank Gregory, who had explored the country, that there were none of those ancient slaty rocks in the regions examined, with quartz veins in them, in which gold could be discovered. He had great pleasure in informing them that Mr. Selwyn, the geological surveyor of the rich auriferous colony of Victoria, was present; a gentleman who had contributed more to the real advancement of their knowledge as to what was probably to be contained in a gold colony than any other individual: and he, therefore, hoped that Mr. Selwyn would state what he knew of the probability or improbability of gold being found in Western Australia.

Mr. SELWYN said on his way up to Victoria he was at Albany for a few days, when he took the opportunity of seeing as much of the surrounding country as he could. He quite agreed with Mr. Hargreaves that there were no indications there of auriferous country, unless we took certain granitic rocks as being occasionally indicators of the presence of the ore. Hitherto it had not been generally supposed that granitic rocks alone were indications of auriferous country. The rocks about Albany were entirely granitic, overlaid by some of the middle and upper tertiary rocks, consisting of ferruginous grits, quartz grits, and conglomerates, and a white rock, which Mr. Hargreaves referred to as chalky rock, consisting of silicate of alumina with quartz grains in it. He never found fossils in these rocks, but he had found rocks, similar in position and structure, in Victoria, resting sometimes on granite, sometimes on Silurian, and sometimes on the upper palæozoic. All the specimens brought home by Mr. Hargreaves were entirely granitic and tertiary rocks, with a few specimens of hornblendic rocks, which that gentleman spoke of as intersecting the granite. With regard to the auriferous character of these rocks, there was no doubt that these tertiary rocks, or the representatives of these tertiary rocks in Victoria, were the richest gold-bearing rocks. But then they had been derived from the slaty Silurian rocks, whereas in Western Australia they had been derived almost entirely from the granitic rocks. Therefore he thought Mr. Hargreaves was right in his conclusion that in that district auriferous tracts were not likely to be found. Some of the specimens, in which Mr. Hargreaves found indications of copper, he thought were analogous to rocks of central South Australia, from Mount Serle to Mount Remarkable, in which the great copper-mines of South Australia occur. He thought, however, we ought hardly to take an examination of the coast-line as a proof that the whole of Western Australia was not auriferous, because if we looked at the enormous expanse of Western Australia, it would be seen that Mr. Hargreaves had traversed it but to a very limited extent; and it was not improbable that there might be regions in which the Silurian rocks might re-appear. If the coast-line of the province of Victoria, for example, were selected for examination, districts might be found fifty miles from the coast where there would be no auriferous deposits.

The PRESIDENT observed that other travellers had penetrated a considerable distance into the interior of Western Australia, and they had found little else but granite.

Mr. SELWYN added he had travelled over the whole of the settled districts of South Australia, from Cape Jervis to Mount Serle, and there were one or two districts where he thought it possible that the rocks were Silurian, and that gold might be found. But these rocks were only of limited extent: the great mass of the rocks were of a newer formation—Devonian, or something even newer than that. There was a large quantity of quartz, but the quartz did not appear to be auriferous. The characteristic of the South Australian rocks was copper, which was rarely found in the rocks in Victoria, associated with gold. Respecting the occurrence of gold in granite, he might mention that he had received a letter from one of his colleagues in Australia, stating that a new locality in Victoria had been discovered, at Wood's Point, in which the quartz

reefs were turning out extraordinarily rich, far surpassing anything hitherto known. The Surveyor-General stated that the reefs were in granite and did not continue into the adjacent schistose rocks, and were horizontal. The discovery was made by eight miners, who in eighteen months had realized between forty and fifty thousand pounds each.

Mr. CRAWFORD asked if indications of tin had been found in Western Australia.

Mr. SELWYN replied, he had not seen any. Before he left, the Western Australian Government forwarded him some specimens of granite with mineral in it, which he found to be sulphide of molybdenum.

MAJOR SANFORD took exception to the conclusions of Mr. Hargreaves, and was about to enter into the question at some length, when the President begged him to postpone the discussion to a future occasion, in consideration of the importance attached to the next Paper which had to be read, "On the Glaciers of the Mustakh Range," and stated that an early opportunity would be afforded for considering the points mooted as to the capabilities of West Australia.

The second Paper read was—

2. *The Glaciers of the Mustakh Range (Trans-Indus)*. By Captain H. H. GODWIN-AUSTEN, Assistant on the Great Trigonometrical Survey of India.

STARTING from Iskardo 5th August, 1860, the survey of this region may be considered as divided into two grand divisions, separated by a line drawn through Iskardo, Shigar, and a point on the great range of the Kuen-Lun, about 40 miles west of the Mustakh Pass, leading into Little Bucharia. This Mustakh Pass is a newly-discovered pass, described as being capable of being so far improved as to be practicable for ponies, though the height is 18,400 feet. It is separated to the eastward from the renowned Kara-Korum Pass by the magnificent range running eastward from the Kara-Korum Peak, as yet unnamed, the second highest peak in the Himalayahs or the world, which rises about north-west to an elevation of 28,265 feet. Its approximate position is $35^{\circ} 53' \text{ N.}$, $76^{\circ} 35' \text{ E.}$,* that of Mustakh being $35^{\circ} 49' \text{ N.}$, $76^{\circ} 14' \text{ E.}$

The first portion of the survey lay up the Hushi Valley, a tributary of the Nubra, which name the author applies to the whole length of the North fork of the Indus (in lieu of its customary designation of Shah-Yok), instead of confining it as hitherto to the tributary branch of that name which falls in a little above the junction of the Hushi Valley. At the head of the valley he encountered three glaciers, the easternmost of which he traced into the recesses of the immense mass of the Masherbrum ($35^{\circ} 38' \text{ N.}$, $76^{\circ} 20' \text{ E.}$), 25,600 feet high. After surveying these in regular order, he

* The positions assigned in this abstract are only approximative as derived from the Map.—ED.